

REMARKS

The Examiner is thanked for the due consideration given the application. The specification has been amended to improve the language. Appended to this paper are: i) the International Search Report, ii) the EP Official Action of January 10, 2006, and iii) allowed claims of the EP application, with the amendments suggested by the EP Examiner emphasized to remedy the objection of clarity only.

Claims 1-21 are pending in the application. Independent claims 1 and 7 have been amended to reflect the allowed claims of the EP application. Claims 2-6 and 8-21 have been amended to improve their language in a non-narrowing fashion.

Election/Restriction

The claims of the invention have been restricted into the following groups:

Group I, claims 1-6, drawn to a method for twin-sheet thermoforming of plastic fuel tanks; and

Group II, claims 7-21, drawn to an apparatus for twin-sheet thermoforming of plastic fuel tanks.

***Group II, claims 7-21, is elected with traverse.***

The application has been restricted into the following species:

Species I, shown in Figure 7; and

Species II, shown in Figure 8.

The Official Action acknowledges that claims 7-16 and 19-21 are generic.

***Species I, shown in Figure 7 is elected with traverse.  
Elected Claims 7-17 and 19-21 read on this elected species.***

The present invention is the national phase of PCT application EP 2003/014962 which originated as a corresponding EP application, now granted and published under number 1 587 666, which can be downloaded from ESPACENET the EP data bank.

For the Examiner's consideration that following documents have been appended to this paper:

- i) International Search Report;
- ii) EP Official Action of January 10, 2006; and
- iii) Allowed claims, with the amendments suggested by EP Examiner emphasized to remedy to the objection of clarity only.

The Official Action asserts that the inventions listed in Groups I and II do not relate to a single general inventive concept under PCT rule 13.1 because, under PCT rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature in all groups is having the open cavities of both molds facing upwards, and that this element cannot have a special technical feature under PCT Rule 13.2 because the element is shown in the prior art of U.S. Patent 3,779,687 (US '687) teaches mold halves 106, 107 in Figure 2 having upwardly facing cavities 108 (as shown in Figure 5).

However, traversal is proper in light of a comparison of the features that are compared in US '687 to those of the present invention.

As can be seen from claims 1 and 7 of the present invention, either the method and apparatus claims have in common the following features:

i) The present invention sets forth the use of means for "pneumatically clamping" the plastic sheets along their peripheral edges (claim 1, lines 10-11 and claim 7 lines 15-17) - this feature is new in respect to US '687 which discloses the use of magnetically actuatable gripping means 96, 98.

ii) The present invention sets forth the use of vacuum supporting means, for supporting the sheet in a flat condition while it is moved along the processing line, in combination with the pneumatically actuatable gripping means (claim 1, lines 10, 11 and claim 7, and in the specification claim section at lines 15-17, lines 31, 32, of page 21, and lines 1-3 of page 22). This feature also is new in respect to US '687 in which a sheet, during heating and movement, is retained on two sides only by two arms 90, 92. No vacuum is disclosed in US '687 to keep the sheet in a planar configuration during heating and moving along the processing line. A sagging of the heated sheets is inevitably present in US '687 during the movement.

iii) In the present invention one mold is kept steady in a horizontal position, while the other mold is up-side down

turned on the first one, for welding. Conversely in US '687 the two molds are closed in a vertical disposition.

iv) In the present invention (as instantly amended) the processing lines, are parallely arranged side by side (see specification at page 8, line 5), while in US '687 the sheets are moving along circular paths. The parallel disposition of the two processing line allows a free access to the molding station by an operator, and to add a cooling device.

No cooling is disclosed or made possible by the circular disposition of US '687.

The Official Action asserts that Species I and II do not relate to a single general inventive concept under PCT rule 13.1 because, under PCT rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature in all species is a cooling station, and that this element cannot be a special technical feature under PCT Rule 13.2 because this element is shown in the prior art of WO 02/14050, which teaches a twin-sheet thermoforming apparatus with a mold cooling station 20.

However, both claims 17 and 18 depend on claim 16. As a result, a finding of allowability of claim 16 would render both claims 17 and 18 instantly allowable. As a result there is no undue burden to rejoin and examine both species.

Accordingly, rejoinder of the Groups I and II and Species I and II and examination on the merits is respectfully requested.

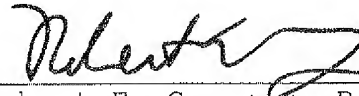
**Conclusion**

The Examiner is thanked for considering the Information Disclosure Statement filed July 6, 2005 and for making an initial PTO-1449 term of record in the application.

The Commissioner is hereby authorized in this, concurrent, and future submissions, to charge any deficiency or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



---

Robert E. Goozner, Reg. No. 42,593  
Customer No. 00466  
209 Madison Street, Suite 500  
Alexandria, VA 22314  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

REG/jr

APPENDIX:

The Appendix includes the following item(s):

- ☒ - claims from EP 1 587 666 B1
- ☒ - an International Search Report
- ☒ - a Communication pursuant to Article 96(2) EPC

by tightly pressing and fusing their sealing areas one against the other around the peripheral edges of the two shells.

[0092] This can be achieved, for example, by overturning one of the two molds by 180°, for example by making the mold 17B rotate in the direction of the arrow F1 in figure 4, around the rotational axis 32, upside, down the other mold 16A, as shown by the block diagram 19 in figure 1.

[0093] At this point, the two molds are tightly pressed one against the other, exerting an adequate clamping force, and pinching the two sealing areas of the two shells thereby fusing them hermetically together.

[0094] After having completed a fuel tank, the latter can be cooled while maintaining it closed in the two molds. Upon completion of the cooling, the two molds, still closed, can be moved back to one of the two thermoforming stations 17A, 17B and opened to carry out the demolding and discharge of the finished fuel tank, directly in the same thermoforming station.

[0095] All this can be carried out within an extremely short period of time, during the execution of a subsequent operative cycle, so as to use the same molds again for manufacturing a next fuel tank.

[0096] Therefore, by operating in a continuous cycle with the two processing lines 10A and 10B, according to the previously described procedures, it is possible to produce plastic fuel tanks, complete with the respective accessories and components, in an extremely limited time, reducing the scraps of material due to the combined use of the two pneumatic gripping and conveying devices along the two processing lines, makes it possible to form sealing having extremely limited surfaces; according to the invention it is also possible to produce plastic fuel tanks complete with their respective accessories having improved structural characteristics.

[0097] Figures 7 and 8 show, by way of example, two possible solutions with regard to the cooling station, in addition to other details of the thermoforming stations and the stations for introducing the inserts and/or components into the molds and/or into the two thermoformed shells; in said figures, the same reference numbers used as per the previous figures, to indicate similar or equivalent parts.

[0098] As shown in figure 7, the cooling station 20 comprises a rotary table 50 having two or more molds supporting surfaces 51, 52, onto which the closed molds 17A, 17B are transferred for the cooling phase.

[0099] The rotary table 50 is made to rotate and indexed by a motor 53 in order to align from time to time one of the mold supporting surfaces 51, 52, with the thermoforming station, to allow the transfer of the closed molds, for example, between the thermoforming station 16B and the surface 51, while another closed molds undergoing cooling is already disposed on the surface 52 or on the other surfaces of the rotary table. Figure 7 schematically indicates various robots or operators for the movement of the shaping plug 49, or for picking up and

automatically introduce the inserts into the molds, or for discharging the finished fuel tanks.

[0100] The example of figure 8 differs from the previous figure in that the cooling station 20 now comprises a shuttle 54 reciprocable along a guide 55, which extends on a side parallel to the processing line 16B. The shuttle 54 is provided with two mold supporting surfaces 56, 57 which can be aligned with the thermoforming station 16B, by appropriately moving the shuttle along the guide 55.

[0101] In both cases, the mold supporting surfaces 51, 52 of the rotary table 50, or the mold supporting surfaces 56, 57 of the shuttle 55, can be used for carrying out the replacement of the molds, at each change of production, or for other requirements.

[0102] It is understood that what has been described with reference to the accompanying drawings, has been given purely by way of example in order to illustrate the general features of the method and the plant according to this invention; therefore, other modifications or variations may be made, without thereby departing from the claims.

## Claims

1. Method for twin-sheet thermoforming plastic fuel tanks, according to which first and second sheets (SA, SB) of thermoformable plastic material are independently heated and moved along a first (A) and, respectively, along a second (B) processing line from a loading station (11A, 11B) to a respective thermoforming station (16A, 16B), the method comprising the main steps of:

- subjecting each plastic sheet (SA, SB) to a heating;
- pneumatically clamping the heated plastic sheets (SA, SB) along their peripheral edges by air suction, and vacuum supporting the same sheets (SA, SB) in a substantially flat condition by controlling the vacuum degree while they are moved along their respective processing lines (A, B);
- positioning each heated plastic sheet (SA, SB) above a respective shaping mold (17A, 17B) having a facing-up shaping cavity, while continuing to pneumatically hold the sheet (SA, SB) in the aforesaid substantially flat condition;
- lowering the heated plastic sheet (SA, SB) into a respective mold (17A, 17B); and
- thermoforming each heated plastic sheet (SA, SB) into a respective shell (GA, GB), making the same sheet (SA, SB) to adhere to the upwardly open cavity of the shaping mold (17A, 17B);

the method also comprising the supplementary steps of:

- up-side down turning one (17B) of the shaping molds (17A, 17B) and the thermoformed shell (GB);
  - superimposing said up-side down turned mold (17B) to the other one (17A) facing up mold (17A), to overlap peripheral sealing areas of the two superimposed thermoformed shells (GA, GB); and
  - fusing and hermetically welding the overlapped sealing areas of the shells (GA, GB) by pressing said overlapped sealing areas between clamping surfaces of the shaping molds (17A, 17B).
2. Method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of pre-heating (12A, 12B) each plastic sheet (SA, SB) to a first heating temperature lower than a thermoforming temperature, and maintaining the heating of the sheet (SA, SB) while it is moving along the processing line (A, B).
  3. Method for twin-sheet thermoforming of fuel tanks according to claims 1 and 2, comprising the steps of controlling and adjusting the vacuum degree for supporting the sheet (SA, SB), to prevent sagging during the heating.
  4. Method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of introducing inserts and/or components for the fuel tank, into the upwardly facing cavity of the molds, before thermoforming of the plastic sheets (SA, SB).
  5. Method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of introducing inserts and/or components of the fuel tank, into the thermoformed shells (GA, GB) through the upwardly facing cavity of the molds (17A, 17B).
  6. Method for twin-sheet thermoforming of fuel tanks according to claim 1, comprising the steps of removing the closed molds (17A, 17B), and of carrying out a cooling of the same closed molds (17A, 17B) outside of the processing lines.
  7. Plant for manufacturing plastic fuel tanks comprising first and second twin-sheet thermoformed shells (GA, GB), according to which first and second thermoformable plastic sheets (SA, SB) are independently heated and moved along respective first and second processing lines (A, B), from a loading station (11A, 11B) through at least one heating station (12A, 14A; 12B, 14B), towards a respective thermoforming station (16A, 16B) where the individual plastic sheets (SA, SB) are thermoformed in a first and a second shell (GA, GB) into a respective first and second shaping mold (17A, 17B), wherein:
    - said first and second shaping molds (17A, 17B) are side by side arranged with the open cavities of both molds (17A, 17B) facing upwards;
- wherein each processing line (A, B) comprises air suction frames (24A, 24B) for gripping the plastic sheets (SA, SB) around their peripheral edges, and a vacuum sheet holding device (15A, 15B) comprising a vacuum chamber (22) for holding the heated plastic sheets (SA, SB), said air suction frames (24A, 24B) and said vacuum holding device (15A, 15B) being movable along the processing lines (A, B); and vacuum control means comprising an adjustable vacuum source to control the vacuum degree in the vacuum chamber (22) of the vacuum holding device (15A, 15B), to supporting the heated plastic sheets (SA, SB) in a substantially flat condition; and drive means (33) conformed and arranged to turn one mold (17A, 17B) upside down to superimpose to the other one (17A, 17B) and to cause welding of overlapped sealing areas of the thermoformed shells (GA, GB), by compression of the overlapped sealing areas by the same molds (17A, 17B).
8. Plant for manufacturing plastic fuel tanks according to claim 7, comprising a sheet preheating station (12A, 12B).
  9. Plant for manufacturing plastic fuel tanks according to claim 7, comprising a sheet centering station (13A, 13B).
  10. Plant for manufacturing plastic fuel tanks according to claims 8 and 9, wherein the sheet centering station (13A, 13B) is provided upstream of the sheet preheating station (12A, 12B).
  11. Plant for manufacturing plastic fuel tanks according to claims 8 and 9, wherein the centering station (13A, 13B) is provided between the preheating station (12A, 12B) and a second heating station (14A, 14B) for the plastic sheets (SA, SB).
  12. Plant for manufacturing plastic fuel tanks according to claim 7, wherein the vacuum supporting device (15A, 15B) comprises heating elements (28) for the plastic sheets (SA, SB).
  13. Plant for manufacturing plastic fuel tanks according to claim 7, wherein each mold (17A, 17B) comprises second pneumatically actuatable sheet gripping means (36A, 36B).
  14. Plant for manufacturing plastic fuel tanks according to claim 7, wherein said vacuum holding device (15A, 15B) is in the form of a pneumatically actuatable suction bell.



15. Plant for manufacturing plastic fuel tanks according to claim 7, comprising a mold cooling station (20) on one side of the processing lines (A, B), in a side aligned condition with a thermoforming station (16A, 16B), for transferring the closed molds (17A, 17B) 5 between the thermoforming station (16A, 16B) and the cooling station (20) of the plant.
16. Plant for manufacturing plastic fuel tanks according to claim 15, wherein the cooling station (20) comprises a rotary table (50) having a plurality of mold supporting surfaces (51, 52). 10
17. Plant for manufacturing plastic fuel tanks according to claim 15, wherein the cooling station (20) comprises a reciprocable mold supporting shuttle (54) parallelly arranged to the processing lines (A, B), said shuttle (54) being provided with at least a first and a second mold supporting surfaces (55, 56). 15
18. Plant for manufacturing plastic fuel tanks according to claim 15, wherein said means for transferring the molds (17A, 17B) comprise a mold clamping cage (40, 41) reciprocable between a thermoforming station (16A, 16B) and the cooling station (20). 20
19. Plant for manufacturing plastic fuel tanks according to claim 7, wherein said drive means for upside down turning one mold (17B), comprises a book press. 25
20. Plant for manufacturing fuel tanks according to claim 13, wherein each mold (17A, 17B) comprises additional mechanical means (48) for gripping the edges of the heated plastic sheets (SA, SB). 30

#### Patentansprüche

1. Verfahren zum Doppellagen-Thermoformen von Kunststoff-Kraftstofftanks, wobei eine erste und eine zweite Lage (SA, SB) aus einem thermoformbaren Kunststoffmaterial unabhängig voneinander erhitzt und entlang einer ersten (A) bzw. entlang einer zweiten (B) Verarbeitungslinie von einer Ladestation (11A, 11B) zu einer zugehörigen Thermoform-Station (16A, 16B) bewegt werden, und wobei das Verfahren die Hauptschritte umfasst:
- Aussetzen von jeder Kunststoff-Lage (SA, SB) einer Erhitzung;
  - pneumatisches Festklemmen der erhitzten Kunststoff-Lagen (SA, SB) entlang der Umfangskanten durch Luftansaugung, sowie abstützendes Halten der gleichen Lagen (SA, SB) durch Vakuum in einem im Wesentlichen ebenen Zustand durch Steuerung des Ausmaßes des Vakuums, während sie entlang ihrer zugehörigen Verarbeitungslinien (A, B) bewegt wer-

den;

- Positionieren von jeder erhitzten Kunststoff-Lage (SA, SB) über einem zugehörigen formgebenden Gesenk (17A, 17B) mit einem nach oben zeigenden formgebenden Hohlraum, während die Lage (SA, SB) weiterhin pneumatisch in dem obigen, im Wesentlichen ebenen Zustand gehalten wird;
- Absenken der erhitzten Kunststoff-Lage (SA, SB) in ein zugehöriges Gesenk (17A, 17B); und
- Thermoformen von jeder erhitzten Kunststoff-Lage (SA, SB) zu einer jeweiligen Schale (GA, GB), wobei bewirkt wird, dass die gleiche Lage (SA, SB) an dem nach oben gerichtet offenen Hohlraum des formgebenden Gesenks (17A, 17B) anhaftet;

wobei das Verfahren ferner die zusätzlichen Schritte umfasst:

- Umdrehen von einem (17B) der formgebenden Gesenke (17A, 17B) und der thermogeformten Schale (GB);
- übereinander Anordnen des umgedrehten Gesenks (17B) bezüglich des anderen (17A) nach oben zeigenden Gesenks (17A), um die umlaufenden Dichtungsgebiete der beiden übereinander angeordneten, thermogeformten Schalen (GA, GB) in Überlappung zu bringen; und
- Schmelzen und thermisches Verschweißen der überlappenden Dichtungsgebiete der Schalen (GA, GB), indem die überlappenden Dichtungsgebiete zwischen Klebflächen der formgebenden Gesenke (17A, 17B) zusammengepresst werden.

2. Verfahren zum Doppellagen-Thermoformen von Kraftstofftanks gemäß Anspruch 1, mit den Schritten des Vorerhitzens (12A, 12B) von jeder Kunststoff-Lage (SA, SB) auf eine erste Erhitzungstemperatur, die geringer ist als eine Thermoform-Temperatur, und des Beibehaltens der Erhitzung der Lage (SA, SB), während sie entlang der Verarbeitungslinie (A, B) bewegt wird.
3. Verfahren zum Doppellagen-Thermoformen von Kraftstofftanks nach Ansprüchen 1 und 2, mit den Schritten des Steuerns und Einstellens des Ausmaßes des Vakuums zum abstützenden Halten der Lage (SA, SB), um ein Durchhängen während des Erhitzens zu verhindern.
4. Verfahren zum Doppellagen-Thermoformen von Kraftstofftanks nach Anspruch 1, mit den Schritten des Einsetzens von Einsätzen und/oder Komponenten für den Kraftstofftank in den nach oben zeigenden Hohlraum der Gesenke, und zwar vor dem Thermoformen der Kunststoff-Lagen (SA, SB).

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CO/bm/1881	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/14962	International filing date (day/month/year) 30/12/2003	(Earliest) Priority Date (day/month/year) 10/01/2003
Applicant CANNON S.P.A.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
2. ☐ **Certain claims were found unsearchable** (See Box I).
3. ☐ **Unity of invention is lacking** (see Box II).
4. With regard to the **title**,
- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

- ☒ as suggested by the applicant. ☐ None of the figures.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 03/14962

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B29C65/18 B29C69/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 017, no. 679 (M-1527), 14 December 1993 (1993-12-14) & JP 05 229015 A (TOYOTA MOTOR CORP), 7 September 1993 (1993-09-07)	1,2
A	abstract & DATABASE WPI Week 199345 Derwent Publications Ltd., London, GB; AN 1993-353986 & JP 05 229015 A abstract	7,20
Y	US 3 779 687 A (ALESI J) 18 December 1973 (1973-12-18)	1,2
A	column 1, line 1 - line 41 column 4, line 31 - column 6, line 2; figures 1-11	7-9
	--- -/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*S\* document member of the same patent family

Date of the actual completion of the international search

12 May 2004

Date of mailing of the international search report

24/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Ingelgard, T.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 03/14962

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 1 515 385 A (A ARTICOLI GOMMA AFFINI S P A) 1 March 1968 (1968-03-01) page 3, column 1, line 1 -column 2, line 4; claim 3; figures 1-3 -----	1,7
A	US 2 796 033 A (EDWARD FEINSTEIN) 18 June 1957 (1957-06-18) column 1, line 1 - line 17 column 2, line 38 -column 3, line 38; figures 1-3 -----	1,7
A	PATENT ABSTRACTS OF JAPAN vol. 007, no. 009 (M-185), 14 January 1983 (1983-01-14) & JP 57 167211 A (MITSUBISHI DENKI KK), 15 October 1982 (1982-10-15) abstract -----	3,7,13
A	DE 39 36 891 A (ILLIG MASCHINENBAU ADOLF) 8 May 1991 (1991-05-08) column 2, line 22 - line 40 -----	7,14

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/14962

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 05229015	A	07-09-1993	JP 3047595 B2	29-05-2000
US 3779687	A	18-12-1973	NONE	
FR 1515385	A	01-03-1968	BE 699961 A	16-11-1967
			ES 337931 A1	16-03-1968
			NL 6707546 A	02-12-1968
US 2796033	A	18-06-1957	NONE	
JP 57167211	A	15-10-1982	NONE	
DE 3936891	A	08-05-1991	DE 3936891 A1	08-05-1991



✉ EPA/EPO/OEB  
D-80298 München  
☎ +49 89 2399-0  
TX 523 656 epmu d  
FAX +49 89 2399-4465

Europäisches  
Patentamt

Generaldirektion 2

European  
Patent Office

Directorate General 2

Office européen  
des brevets

Direction Générale 2

Coloberti, Luigi  
Via E. de Amicis, 25  
20123 Milano  
ITALIE

Telephone numbers:

Primary Examiner (substantive examination) +49 89 2399-7249

Formalities Officer / Assistant (Formalities and other matters) +49 89 2399-8221



Application No. 03 799 514.9 - 2307	Ref. CO/mc/2078	Date 10.01.2006
Applicant CANNON S.P.A.		

**Communication pursuant to Article 96(2) EPC**

The examination of the above-identified application has revealed that it does not meet the requirements of the European Patent Convention for the reasons enclosed herewith. If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(1) EPC.

You are invited to file your observations and insofar as the deficiencies are such as to be rectifiable, to correct the indicated deficiencies within a period

**of 4 months**

from the notification of this communication, this period being computed in accordance with Rules 78(2) and 83(2) and (4) EPC.

One set of amendments to the description, claims and drawings is to be filed within the said period on separate sheets (Rule 36(1) EPC).

**Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Article 96(3) EPC).**



Ingelgard, T.  
Primary Examiner  
for the Examining Division

Enclosure(s): 2 page/s reasons (Form 2906)

**Bescheid/Protokoll (Anlage)**

Datum  
Date  
Date 10.01.2006

**Communication/Minutes (Annex)**

Blatt  
Sheet  
Feuille 1

**Notification/Procès-verbal (Annexe)**

Anmelde-Nr.:  
Application No.: 03 799 514.9  
Demande n°:

The examination is being carried out on the **following application documents**:

**Description, Pages**

1-19 as published

**Claims, Numbers**

1-21 as published

**Drawings, Sheets**

1/7-7/7 as published

1 Clarity

The application does not meet the requirements of Article 84 EPC, because claims 1, 7 and the description are not clear.

1.1 Claims 1 (the phrase ".. supporting the same sheet in a substantially flat condition ..") and 7 (the phrase ".. supporting the plastic sheet in a substantially flat condition ..") do not meet the requirements of Article 84 EPC in that the matter for which protection is sought is not defined. The claims attempt to define the subject-matter in terms of the result to be achieved. Such a definition is only allowable under the conditions elaborated in the Guidelines C-III, 4.7. In this instance, however, such a formulation is not allowable because it appears possible to define the subject-matter in more concrete terms, viz. in terms of how the effect is to be achieved. The clarity objection can be overcome by adding features from claims 3 and 13 respectively.

1.2 The statement in the description on page 19, line 22 - line 26, implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity of the claims (Article 84 EPC) when used to interpret them (see the Guidelines, C-III, 4.3a). This statement should therefore be amended to remove this inconsistency.

2 Further remarks

**Bescheid/Protokoll (Anlage)**

Datum  
Date  
Date 10.01.2006

**Communication/Minutes (Annex)**

Blatt  
Sheet  
Feuille 2

**Notification/Procès-verbal (Annexe)**

Anmelde-Nr.:  
Application No.: 03 799 514.9  
Demande n°:

When filing amended claims the applicant should at the same time bring the description into conformity with the amended claims. Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicant should clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see Guidelines E-II, 1). If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.